

WHAT IS CLAIMED IS

- 1 1. An apparatus for directing a radio frequency (RF) transmit (Tx) signal within a
2 specific Tx band to a separate path comprising:
3 a switch;
4 a first filter coupled to the switch to receive a switched Tx signal and produce
5 a first filtered Tx signal; and
6 a second filter coupled to the switch to receive the switched Tx signal and
7 produce a second filtered Tx signal;
8 wherein the switch connects to one of the first and second filters based upon a
9 channel assignment of the Tx signal within the specific Tx band.
- 1 2. An apparatus of claim 1 wherein the first filter has a first passband within the
2 Tx band and provides higher insertion loss outside of the first passband than
3 inside of the first passband.
- 1 3. An apparatus of claim 1 wherein the second filter has a second passband
2 different from the first passband within the Tx band and provides higher
3 insertion loss outside of the second passband than inside of the second
4 passband.
- 1 4. An apparatus of claim 1 wherein the first passband and the second passband,
2 both being within the Tx band, have no common frequency range.
- 1 5. An apparatus of claim 1 wherein the first passband and the second passband,
2 both being within the Tx band, overlap.
- 1 6. An apparatus of claim 1 further comprising a modulator coupled to the switch,
2 producing the Tx signal having a Tx signal frequency substantially equal to a
3 desired RF Tx frequency.

1 7. An apparatus of claim 1 further comprising a second switch coupled to the
2 first and the second filters wherein the second switch is connected to one of
3 the first and the second filters based upon the channel assignment within the
4 specific Tx band, and produce a second switched Tx signal.

1 8. An apparatus of claim 1 further comprising a power amplifier (PA) coupled to
2 the second switch to receive the second switched Tx signal and produce an
3 amplified Tx signal for transmission at a PA output.

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- 1 9. An apparatus for generating a radio frequency (RF) transmit (Tx) signal
2 having reduced noise by directing a RF Tx signal within a specific Tx band to
3 a separate path comprising:
- 4 a modulator producing the Tx signal having a Tx signal frequency
5 substantially equal to a desired RF Tx frequency;
- 6 a first switch coupled to the modulator to receive the Tx signal;
- 7 a first filter coupled to the first switch to receive a first switched Tx signal and
8 produce a first filtered Tx signal, having a first passband within the Tx
9 band and provides higher insertion loss outside of the first passband
10 than inside of the first passband;
- 11 a second filter coupled to the first switch to receive the first switched Tx signal
12 and produce a second filtered Tx signal, having a second passband
13 different from the first passband within the Tx band and provides
14 higher insertion loss outside of the second passband than inside of the
15 second passband;
- 16 a second switch coupled to the first and second filters to receive the first and
17 the second filtered Tx signal, respectively, producing a second
18 switched Tx signal; and
- 19 a power amplifier (PA) coupled to the second switch to receive the second
20 switched Tx signal to produce an amplified Tx signal for transmission
21 at a PA output;
- 22 wherein the first and the second switches connect to one of the first and the
23 second filters based upon a channel assignment of the Tx signal within
24 the specific Tx band.

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1 10. A method for generating a radio frequency (RF) transmit (Tx) signal having
2 reduced noise by directing a RF Tx signal within a specific Tx band to a
3 separate path comprising steps of:

4 determining an appropriate path, which is one of a plurality of paths each
5 having a bandpass filter, for the Tx signal based upon a channel
6 assignment of the Tx signal;

7 establishing the appropriate path for the Tx signal; and

8 sending the Tx signal through the appropriate path.

1 11. A method of claim 10 wherein the bandpass filter of each of the plurality of
2 paths has a passband within the Tx band and is different from passbands of
3 other bandpass filters.

1 12. A method of claim 10 wherein the appropriate path has the bandpass filter
2 having the passband encompassing the channel assigned to the Tx signal.